SMITHSONIAN INSTITUTION.

UNITED STATES NATIONAL MUSEUM.

MEMORANDUM.

Disposition
of
Dr. Mearns
Mex. Boundary
Collection
of
Mammals.

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Disposition of Dr. Mearns's Int. Bound. Collection of Mammals.

3rd Floor Laboratory.

Case of Canidae

Procyon	Bassariscus
~~Taxidea~~	
~~Conepatus~~ Mephitis	
~~Mephitis~~	
Spilogale	

Case of Marsupials

~~Dicotyles~~ ~~Castor~~ } see Case of Ursidae	
~~Ovis~~ see Ursidae case	~~Antilocapra~~ see Upper ½ unit Case Canis ~~Lycaon~~
~~Lynx~~ see Ursidae Case	~~Ursus~~
(part) Canis see also upper half-unit Case	
Urocyon	Vulpes

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3rd Floor Laboratory.

URSIDAE CASE.

Castor, Ursus

Dicotyles

Antilocapra, Ovis, Lynx

UPPER HALF UNIT CASE

Cariacus

Cariacus

Part of Canis

(see also Marsupial Case)

~~skulls to be cleaned.~~

Disposition of Dr. Mearn's Mex. Bound. Collection of Mammals

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Disposition of Dr. Mearn's Mexican Boundary Collection of Mammals.

LARGE MONKEY Case

N

1	2 (See DIV #4) Spermophilus Skins + Skulls Tamias	3 Cynomys Skins + Skulls	4 Spermophilus (See DIV. #2) Skins + Skulls.
5 Dr Mearn's Mime Collection. Tamias-skulls	6 Skulls of FELIS + LYNX	7 Skulls of Procyon, Vulpes Urocyon, ~~Lynx~~ Castor, Ursus	8

S + Dicotyles, Taxidea

HORSE-TAIL MONKEY GROUP

N

9 Dipodomys Skins + Skulls	10 ~~Geomys~~ (Skins + Skulls) ~~Sigmodon~~ (Skins + Skulls) Thomomys (Skins + Skulls)	11 SCIURUS Skins + Skulls	12 Neotoma Skins + Skulls.
13 Mephitis Conepatus Skulls of Dr. Mearn's Personal Deposit	14 Sitomys Skins + Skulls.	15 S + S S + S Onychomys, Mus Perognathus S + S Arvicola Keithrodontomys	16 Perodipus S + S Chiroptera (S + S)

S

Cales skulls of Mephitis, Conepatus + ~~Spilogale~~ + Bassariscus

" " " Urocyon, Procyon, Lynx

Mammals. Montréjeau — (cf. Baed. map, Delpp. 176-7

July 3-8, 1899.

1. Crocidura. Only 3 specimens secured, its place seeming to be taken by the following species. These three were taken in woods.

2. Sorex. The common shrew of this region. Specimens were secured in grain fields bordering a stream near Montréjeau, along a stream - R de Nistos, which comes down from the mts. at Aventignan; both in the meadows and woods, and in other woods between Aventignan & Montréjeau.

3. Crossopus. A few specimens secured in the same localities as the preceding, excepting away from the streams.

4. Microtus ——— Water Rat. Two adults were all I could secure, outside of a few immature specimens. Both were taken along streams in meadows, one near Montréjeau, the other near Aventignan.

5. Microtus —— A badly eaten specimen was all

I secured. It was taken in a runway in the moss, possibly made by a mole, in some open chestnut woods near Aventignan.

6. Evotomys. Two specimens were taken in woods along the stream at Aventignac.

7. Mus decumanus. One was taken on the bank of a stream near a mill at Montegean; another in a store in the town.

8. Mus sylvaticus. Abundant everywhere.

The following were reported to me;

Lepus cuniculus. Said to be rare on account of the depredations of the following species. I met an old who had a number of rabbit skins, which he said he had snared in the mountains. He said they were "sauvage", but as he conversed chiefly in Gascogny patois I found it difficult to understand

him, and according to the reports, I am inclined to believe he was intentionally mistaken.

Vulpes vulgaris. Said to be common.

Mustela foina. do.

Lus. Said to be fairly common coming down from the mountains occasionally to feast on potatoes.

Physical & Floral Features of Montréjeau

(cf. Baed. map bet. pp. 176-7)

July 3-8, 1899.

Montréjeau is situated on a hill north of the Garonne valley. The elevation of Mazères about 1 m. to the N.W. in the valley is (cf Baed.) 430 m. and of Taillebourg about 1/2 m. east 393 m. Montréjeau has an elevation perhaps 60-70 m. above the valley. On the other side of the valley which here becomes divided ~~by~~ at the junction of the Garonne and the Neste, lies the first of the Pyrenees Mts, rising up abruptly from the valley, their sides mostly clothed with luxuriant growths of chestnut oak, maple, beech and other deciduous timbers. On the Montréjeau, or north, side of the valley the country is very similar in its general features to that lying north of the Garonne at Cadillac. The only striking difference in the flora at Montréjeau from that at Cadillac are the great abundance of

chestnut timber and the larger proportions attained by the Oaks & Tilias, which are also, perhaps, more numerous here than at Cadillac. Outside of a few scattering pines the only coniferous trees I met were Abies, Picea, a few of which I found in private gardens, and one or two other conifers in a private yard, which I think were cedars. Some common wayside and woodland plants which I found are the following: "h", "a" along highways, "i", "K", "l", "m" "n" " "
"o", "p", " dry "
"q" " "
"r", on a dry rocky hillside
"s", in woods along R. de Larise.

I noticed an abscence of Jays(?) at Montrejean, which were common at Cadillac; also of a bird somewhat resembling our Flicker, perhaps a little larger, with a red top head, a white rump & in general olive brown back. It was a Woodpecker and had a very harsh loud note (somewhat like the scold of our Robin magnified)

Physical & Floral Features of Cadillac.

June 22 & 29, 1899.

Cadillac is situated near the head of tide water on the River Garonne. North of the river the country is rolling; south, it is a level plain. The soil is mainly argillaceous, but becomes sandy as we approach the "Landes" which extend to within a mile of the river at this point. The country is very extensively cultivated and is fairly well watered by small streams flowing into the Garonne. In the hilly country north of the river the streams flow swiftly through rocky beds, but in the plain to the south they flow sluggishly through reedy channels, in which the tide is noticeable. Excepting the "Landes" there are very few woods.

The principal fruit cultivated is the grape, but cherries, peaches, plums, (pears) and apples are also raised to some extent. I did not find the mulberry here, nor have I found it anywhere in south-western France. According

to all ports there are no citrous fruits or olives raised, worthy of mention, in south western Texas. The Indian corn or maize is raised in considerable quantities, also wheat rye and oats in abundance and buckwheat to a small extent.

Of the trees and plants common in the region we may mention: thus maples, "a" Lombardy poplars, poplars "b," Fraxinus ulmaceus, oaks. In the woods are numerous thorn apples, birches, numerous ivy vines, occasionally vine "e", and in one patch of woods where I did most of my trapping, shrub "a" was exceedingly abundant. In the fields some of the common flowers are: Lotus corniculatus, "c", "d", Lespedeza (which I think is cultivated) Convolvulus "i". Along the streams are numerous alders and willows. In the edge of the "Landes" we find abundant pines (these are not entirely restricted to this region), scrubby oaks, large groves of acacias, "f", "j", Thymus serpillum, Genista sarothamnus (not restricted

to the "Lands").

A few chestnut trees occur at Cadillac, but they not numerous, and I think they are cultivated & not wild. The oaks, for the most part, do not attain large dimensions.

Mammals of Cadillac.

June 22-29, 1899.

1. Bats. Very abundant in the Chateau d'Epenon & the old church. The only specimens I secured were a skeleton in the chateau and an alcoholic from Kataste.

2. Crocidura. Abundant everywhere, especially in the woodswhere plant "a" was plentiful. It was taken at the base of trees & shrubs, among the rocks, under old wood piles, in barns and in meadows along streams. Mostly on the surface of the earth, but one or two taken in subterranean runways.

3. Crossopus. Two were taken in a meadow on the edge of a stream.

4. Talpa. Very abundant and pretty generally distributed.

5. Weasel. Only one specimen secured, an alcoholic given me by Kataste.

6. Myoxus. One skull only secured, alcoholic from Kataste.

7. Microtus musignani. One adult and several immature specimens secured in

a meadow along a stream. They, together with Mus decumanus, make numerous runways in the reeds along the streams, and holes in the banks of the streams mostly above the water. I do not know whether mus uses these holes or not.

8. M. avalis: One specimen in a runway in the grass along edge of stream.

9. M. subterraneus: One specimen secured in a runway in the sand in pine woods.

10. Mus decumanus. The two specimens I secured were both taken along streams, one in a runway a considerable distance from buildings, and the other shot on the bank of a stream near a mill.

11. M. sylvaticus. A pest; occurs everywhere.

12. Evotomys. One taken in a subterranean runway in the woods where "a" abounded. Latasta told me it was abundant at times.

Dr. Mearn's Mexican Boundary Lepus

Collector's Numbers and Museum Numbers

Collector's Numbers	Museum Numbers	Collector's Numbers	Museum Numbers	Collector's Numbers	Museum Numbers
860	20774	1509	60888	1818	35911
972	58932	1529	35466	1819	35898
983	58941	1546	35568	1820	35900
989	58937	1549	35538	1847	35894
1005	58940	1550	35548	1872	35689
1009	58936	1552	35578	1878	35702
1010	58938	1555	35539	1879	35729
1014	58935	1559	35577	1880	35747
1015	58939	1562	35605	1881	35706
1051	58930	1564	35540	1882	35709
1114	58849	1563	35576	1885	35714
1115	58850	1571	35536	1886	35725
1165	60880	1583	35569	1922	35697
1170	60881	1584	35595	1981	35720
1180	60883	1595	60876	1995	35726
1191	60919	1621	35504	1996	35723
1206	60912	1635	35607	2253	36108
~~1209~~	~~35359~~	1663	35604	2351	36107
1256	60921	1664	35541	2367	36109
1298	60922	1680	35537	2376	36105
1300	60849	1725	35530	2402	36106
1351	60913	1737	35633	2455	{SKIN NO. 2147&(?)}
1411	60923	1775	35894	2643	58858
1466	35465	1776	35895	2673	59000
1478	60875	1782	35901	2674	59001
1504	60885	1800	35896	2684	59003
1506	60886	1801	35897	2689	59004
1508	60887	1817	35912	2692	59002

COLLECTOR'S NUMBERS	MUSEUM NUMBERS	COLLECTOR'S NUMBERS	MUSEUM NUMBERS	COLLECTOR'S NUMBERS	MUSEUM NUMBERS
2694	59005	3614	60809		
2724	59224	3624	60917		
2728	59225	3637	60953		
2740	59226	3661	60911		
2790	59289	3692	60870		
2794	59287	3693	60871		
2795	59285	3694	60870		
2831	59283	3698	60667		
2945	59903	3722	60951		
3488	60918	3770	60664		
3496	60871	3771	60665		
3498	60866	3774	60672		
3503	NO NUMBER	3783	60668		
3516	60877	3788	60669		
3529	60907	3792	NO NUMBER		
3530	60914	3800	60666		
3581	60878	3803	60952		
3536	60850	NONUMBER	35837		
3539	60908	NONUMBER	35893		
3540	60920	NONUMBER	35947		
3548	60915				
3549	60916				
3555	NO NUMBER				
3556	60909				
3558	NO NUMBER				
3562	NO NUMBER				
3581	60910				
3582	NO NUMBER				
3583	NO NUMBER				

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1951 { Thomonys

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2666 { Spermophilus

3224 { Spermophilus

3225 { Spermophilus

1452 { Spermophilus

1454 { Spermophilus

1477 { Spermophilus

1601 { Spermophilus

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1416 { Sitonys

1419 { Sitonys

1421 { Sitonys

1424 { Sitonys

1444 { Sitonys

1456 { Sitonys

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1069 { Thomonys

1433 { Thomonys

1440 { Thomonys

1458 { Thomonys

1474 { Thomonys

1576 { Thomonys

1729 { Thomonys

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1525 { Sitonyx

1529 { Sitonyx

1551 { Sitonyx

1562 { Sitonyx

1586 { Sitonyx

1594 { Sitonyx

2119 { Sitonyx (?)
Cynonyx

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1461 { Sitonyx

1476 { Sitonyx

1478 { Sitonyx

1497 { Sitonyx

1510 { Sitonyx

1513 { Sitonyx

1515 { Sitonyx

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1896 { Canacus 35840
— ? — ?

2446 { Canacus — ?
— ? — ?

1527 { mephitis — ?
— ? — ?

2554 { Vulpes 36345
— ? — ?

1504 { Lepus — ?
— ? — ?

1506 { Lepus — ?
— ? — ?

1595 { Lepus — ?
— ? — ?

1533 { Neotoma — ?
— ? — ?

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1509 { Perodipus ——— ?
——— : ——— ?

1553 { Perodipus ——— ?
——— ? ——— ?

1583 { Perodipus ——— ?
——— : ——— ?

1413 { Perodipus ——— ?
——— ? ——— ?

3158 { Perognathus ——— ?
——— ? ——— ?

3791 { Perognathus ——— ?
——— ? ——— ?

1519 { Perognathus ——— ?
——— ? ——— ?

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1439 { Sciurus

1443 { Sciurus

1446 { Sciurus

1437 { Sciurus

1467 { Sciurus

840 { Sitomys

1014 { Sitomys

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1546 { Neotoma ——— ?
——— ? ——— ?

1574 { ~~Neotoma~~ ? ——— ?
~~Neotoma~~ { 60686
60697

1550 { Neotoma ——— ?
——— ? ——— ?

1572 { Neotoma ? ——— ?
——— ? ——— ?

1579 { Neotoma ? ——— ?
——— ? ——— ?

2726 { Perodipus ——— ?
——— ? ——— ?

1508 { Perodipus ——— ?
——— ? ——— ?

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1588 { Perognathus ? ?

1590 { Perognathus ? ?

1422 { Reithrodontomys ? ?

1564 { Reithrodontomys ? ?

1566 { Reithrodontomys ? ?

1584 { Reithrodontomys ? ?

1435 { Sciurus ? ?

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1431 { Tamias

1441 { Tamias

1450 { Tamias

1469 { Tamias

1480 { Tamias

1486 { Tamias

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MEMORANDUM.

Sitomys texensis

" sonoriensis

Types of above.

send Dr. Mearns.

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MEMORANDUM.

Lepus collected by Dr. Mearns.

58848	1111	58935	1014	59225	2728
9	1114	6	1009	6	2740
58850	1115	7	989	7	2768
58858	2643	8	1010	8	2749
58863	1103	9	1015	59283	2821
4	1102	58940	1005	4	2827
5	n.n.	1	983	5	2795
58906	2557	58999	2672	6	2785
7	2519	59000	2673	7	2794
58903	2516	1	2674	8	28[illegible]
4	2517	2	2692	9	2790
58930	1051	3	2684	59290	2758
1	976	4	2689	1	2788
2	972	5	2694	2	2789
3	1011	59223	2750	59901	3028
4	1047	59224	2724	2	2999

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MEMORANDUM.

~~18680~~	~~7037~~	20326	1555	20368	1820	20663	2079
19951	1082	7	1663	9	1726	4	2072
2	1209	8	1765	20370	1807	20741	2666
~~19964~~	~~1226~~	9	1659	1	1782	2	2106
20104	1418	20330	1725	20381	1818	3	2109
5	1417	1	1737	2	1817	20767	2167
6	1419	2	1584	20521	1880	20774	860
7	1466	3	1618	3	1922	21063	2376
8	1529	4	1635	3	1995	4	2350
9	1421 1420	5	1617	4	1872	5	2402
20110	1416	6	1680	5	1885	6	2351
1	1413	7	1552	6	1996	7	2338
20316	1549	8	1621	7	1882	~~2330~~	
7	1562	9	1565	8	1931	9	2367
8	1664	20340	1583	9	1887	8	2253
~~9~~	~~1571~~	~~20361~~	1775	20520	1881	21070	23
20320	1550	2	1776	1	1886	1	2345
1	1564	3	1880	20544	1879	21281	1782
2	1546	4	1744	5	1878	21319	2029
3	1559	5	1801	20660	2071	21478	2455
4	1602	6	1819	1	2051	9	2473
5	1563	7	1847	2	2050		

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Lepus to be sent to Dr. Mearns

MEMORANDUM.

√ 20743	2109 √	20545 / 35702	1878 √
√ 20741	2666 √	20544 / 35729	1879 √
√ 20664	2072 √	20525 / 35714	~~1882~~ 1885 √
√ 20661	2051 √	20522 / 35697	1922 √
20660	2071 √	20527 / 35709	1882 √
20663	2079 √	20529	1887 √
20662	2050 √	20528 / 35720	1931 √
20530 / 35706	1881 √	20521 / 35747	1880 √
20531 / 35725	1886 √	20524 / 35689	1872 √
20742	2106 √		
20526 / 35723	1996 √		
20523 / 35726	1995 √		

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MEMORANDUM.

Nov. 30-94

60867
19951
19952
21281
21478
21479

Skins of Lepus collected by Dr. Mearns that could not be found

2 skins of same no. and one skin without any no. may dispose of two of these skins with the

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MEMORANDUM.

✓59903	2945	✓60875	1478	✓60914	3530
✓60349	3112	✓ 6	1595	✓ 5	3548
✓60350	3265	✓ 7	3576	✓ 6	3549
✓60744		✓ 8	3531	✓ 7	3624
✓60664	3770	✓ 9	no shell 1121	✓ 8	3488
✓ 5	3771	✓60880	1165	✓ 9	1191
✓ 6	3800	✓ 1	1170	✓60920	3540
✓ 7	3698	✓ 2	no shell 1172	✓ 1	1256
✓ 8	3783	✓ 3	1180	✓ 2	1298
✓ 9	3788	✓ 4	no shell 1494	✓ 3	1411
✓60670	3694	✓ 5	1504	✓60951	3722
✓ 1	3496	✓ 6	1506	✓ 2	3803
✓ 2	3774	✓ 7	1508	✓ 3	3637
~~✓60849~~	~~1300~~	✓ 8	1509		
✓60850	3536	✓60907	3529		
✓60866	3498	✓ 8	3539		
7	no shell 3791	✓ 9	3556		
✓ 8	no shell n.n.	✓60910	3581		
✓ 9	3614	✓ 1	3661		
✓60870	3692	✓ 2	1206		
✓ 1	3693	✓ 3	1351		

9/18

List of Lepus to be sent to Dr. Means

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MEMORANDUM.

Lepus sent to Dr. Means

58937	987	59228	2749	58865	n. n.	60879	1121
20774	860	59223	2750	60868	nm	60880	1165
58932	972	59227	2768			60881	1170
58941	983	59290	2758			60882	1172
58931	976	59286	2785			60883	1180
58940	1005	59291	2788	60871	3693	60919	1191
58936	1009	59292	2789			60912	1206
58938	1010	S 59289	2790	60953	3637	60921	1256
58933	1011	S 59287	2794	60951	3722	60922	1298
58935	1014	S 59285	2795			60913	1351
58939	1015	S 59283	2821			60923	1411
58934	1041	59284	2827			60875	1478
58930	1051	S 59903	2945			60884	1494
58864	1102	59902	2999			60885	1504
58863	1103	59901	3028			60886	1506
58848	1111	60349	3112			60887	1508
58849	1114	60350	3265			60888	1509
58850	1115	60671	3492			60876	1545
60849	1300	60850	3536			60918	3488
58913	2516	60670	3694			60866	3498
58914	2517	60667	3698			60877	3516
58907	2519	60644	3770			60867	3527
58906	2557	60665	3771			60914	3530
58858	2643	60672	3774			60878	3531
58999	2672	60668	3783			60908	3539
59000	2673	60669	3788			60920	3540
59001	2674	60666	3800			60915	3548
59003	2684	60952	3803			60916	3549
59004	2689					60909	3556
59002	2692					60910	3581
59005	2694					60869	3614
59224	2724					60917	3624
59225	2728					60911	3661
59226	2746					60870	3692

1 skull.
1 skeleton.

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Dr. Merriam Accession

MEMORANDUM.

609 06

064

on Hand

27598
27612
27625
27709
27626
27742
27749
27803

26022
25823
25576
25392

26371 Nov. 14
28133
28443
28446
28540
28661
28431 Nov. 14
27749
28570

28005
28077
26371 calc.
26608
27250

26528
26689
26608
26553
26499
26471
26371 calc.

27494
27219
27400
27250
27213

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Skulls of Lepus collected by Dr. Mearns. Mex. Boundary.

UNITED STATES NATIONAL MUSEUM. K.S. Matthews

U.S. NAT MUSEUM.

MEMORANDUM.

List of skulls of Lepus to be sent to Dr. Mearns.

~~20317~~ ~~35710~~	58939	1015	35689 / 20524	35895 / 20362	1776	35947
35901 / 20371	59289	2790	35709 / 20527	35899 / 20367	1847	35568 / 20322
35911 / 20381	58935	1014	35725 / 20531	58937	989	35607 / 20334
35720 / 20528	59225	2728	35702 / 20545	58932	972	35595 / 20332
35912 / 20382	~~35747~~	—	35538 / 20316	59004	2689	35900 / 20368 | 1820
20339 35578	58940	1005	35605 / 20319	59005	2694	35556 / 20319
21065 36106	59283	2821	35837	59003	2684	35541 / 20318 (81)
21063 36105	58938	1010	35729 / 20544	59903	2945	
21819 36109	58858	2643	35697 / 20522	59285	2795	
20231 35633	58930	1051	35359 / 19952	58941	983	
35747 / 20521	59226	2740	35530 / 20330	58849	1114	
35466 / 20108	59000	2673	35564 / 20340	59287	2794	
35537 / 20386	59224	2724	36107	58850	1115	
35897 / 20365	35896 / 20363	1800	35564 / 20338	21478 (3)	2455	
35706 / 20530	59000	2692	36108	59001	2674	
35714 / 20525	35678 / 20457	—	35604 / 20327	58936	1009	
35548 / 20320	35586 / 20774	860	35577 / 20323	35898 / 20366	1819	
35726 / 20523	35632 / 20320	1550	35539 / 20326	35576 / 20339	—	
35723 / 20526	35874 / 20361	1775	35540 / 20321	35465 / 20107	—	

Not complete. For further list see Mearns' book. Page 51 and 52

In regard to

Dr. Mearn's Mex. Bound.

Collection.

Peromyscus.

(Manuscript.)

This has been type-written.

Peromyscus merriami Mearns.

Sonoyta Desert Mouse.

Peromyscus merriami, Mearns, Proc. U. S. Nat. Mus., XIX, No. 1103, 189–, p. 138 (p. 2 of advance sheets, issued May 25, 1896).

Type locality. — Village of Sonoyta, on the Sonoyta River, Sonora, Mexico. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — The Sonoyta Desert Mouse is known only from the Sonoyta River, Sonora, near the boundary-line between Mexico and the United States.

Description. — This species has the appearance of the Peromyscus eremicus, living in the same locality*, except that it is larger and stouter. The two have the same coloration, except that P. merriami is somewhat darker, has the light cinnamon color extending down the

* Ten specimens of Peromyscus merriami were taken at Sonoyta, and one at Quitobaquita. Large series of P. eremicus were taken at the same places.

the outer side of the fore limb to the hand, and a large pectoral patch of cinnamon that is usually wanting in P. eremicus.

Cranial and dental characters. (Plate)

The skull resembles that of P. eremicus, except that it is much larger and heavier, with the rostral portion relatively longer, the zygomatic arches wider anteriorly, and the brain-case more elevated. Its larger size serves to identify the skull of this species at a glance, the two anterior molar teeth about equaling the lateral tooth-row of P. eremicus. In P. eremicus ~~rubricauda~~ from Yuma, the skull measures 25.2 mm. in length, P. ~~eremicus~~ merriami measuring 27 mm. In P. merriami the zygomatic arches stand out more prominently, and are more nearly parallel to the long cranial axis, because the zygomatic

processes are more produced and angular anteriorly. The profile of the skull is flatter than in the other Desert Mice. Compared with P. eremicus (typical) the teeth are larger (Fig. —), with the cusps, and corresponding enamel folds of the worn grinding surfaces, more com=
=plex. The skull is of the eremicus type, having the nasals truncate posteriorly, and ending well in advance of the nasal branches of the premaxillaries.

5 P. merriami

do not split this

List of Specimens of Peromyscus merriami.

2807	59237 59237	♀ ad.	Jan. 21, 1894	Sonoyta, Sonora, Mexico
2778	59252 59252	♀ juv.	Jan 13, 1894	do
2805	59236 59236	♂ juv.	Jan. 20, 1894	do
2808	59242 59242	♀ juv.	Jan. 21, 1894	do
2816	59235 59235	♂ juv.	Jan. 22, 1894	do
2824	59244 59244	♂ ad.	Jan. 23, 1894	do
2775	59249 59249	♂ ad.	Jan. 10, 1894	do
2776	59254 59254	♀ ad.	Jan. 10, 1894	do
2815	59234 59234	♀ ad.	Jan. 21, 1894	do Type.
2802	59241 59241	♂ ad.	Jan. 29, 1894	do
2868	59781 59781	♀ ad.	Jan. 31, 1894	Quitobaquito, Sonora, Mexico

This may be of use at Mt. Clark.

Peromyscus (Micaroides)

Material:

6 skins (3 skulls) from Brownsville. Acc. Amount.

4 " (no skulls) " Rockport, in Coll.

2 " " " " " Nogales

2 " " " " " Sonora

2 " " " " " Jamaica

1 " with skull " " " Mt. Clarke

Total 17 skins + 4 skulls examined

Measurements of Brownsville specimens of *P. mearnsii*.

21995 ♂ yg. ad. Length, 182; tail, 85; hind foot, 20½

19789 ♂ ad. " — " — " " —

21994 ♀ yg. ad. " 178; " 78 " " 21

21992 ♀ yg. ad. " 190 " 94 " " 21

Rockport

P. mearnsii

~~560-255-78~~

695 - 345 - 85

720 - 330 - 75

700 - 350 - 80

720 - 375 - 80

650 - 335 - 85

690 - 310 - 85

650 - 310 - 90

michiganensis pallescens Allen

Peromyscus ~~texanus~~ Woodhouse.

No.	Sex + age	Date.	Length.	Tail.	hind-foot
56 ~~57~~	♂ ad.	Dec. 14, 1895.	5.30	2.05	.75
142	♂ ad.	Feb. 6, 1896	5.10	2.20	64
143	♂	Feb. 7, 1896	5.00	2.05	63
141	♂	Feb. 1, 1896	4.95	2.00	60
~~170~~	♂ ♂ ♂	Dec. 14, 1895	5.10	2.00	75
140	♀ ad.	Feb. 1, 1896	5.60	2.35	65
58	♀ ad.	Jan. 8, 1896.	5.20	2.10	70

Also four young specimens. All from San Antonio. Texas. Winter of 1895-96.

These specimens are smaller and darker than typical texanus. My series from between the Rio Grande & the continental divide show size differences but are not comparable as to season. The San Antonio series, collected by Mr. H. P. Attwater, have a dark dorsal area, not seen in my spring specimens from the New Mexico section of the boundary.

6

I am indebted to Dr. J. A. Allen for the opportunity of comparing a series of eleven specimens of this species, taken by Mr. H. P. Attwater in the vicinity of San Antonio, Texas, with those which I collected further west. These specimens from the Middle Texas Tract are smaller and darker than, ~~those~~ the typical form, from the Eastern Desert Tract. Mr. Attwater's specimens, which were taken in winter, have a dark vertebral area, which is lacking in my spring specimens from the New Mexico section of the boundary. Averaging the collector's measurements of the four oldest specimens (two males and two females), we have: length, 135 mm; tail vertebrae, 55; length of hind foot and claw, 17.5.

Peromyscus boylii pinalis (Miller).

Apache Brush Mouse.

Sitomys rowleyi pinalis, Miller, Bull. Am. Mus. Nat. Hist., V, Art. XVIII, December 16, 1893, pp. 331–334 (original description),

Peromyscus rowleyi pinalis, Allen, Bull. Am. Mus. Nat. Hist., VII, Art. VI, June 29, 1895, p. 227.

Type locality. — Granite Gap, Grant County, New Mexico. (Type, skin and skull

Geographical range. — Upper Sonoran and Transition zones of the Elevated Central Tract, in southern Arizona and New Mexico, and in the adjacent parts of Mexico.

Description. — Above pale grayish drab (sometimes buffy), darker and browner in the vertebral region; sides varying in different specimens from buffy drab to cinnamon; orbital area dusky; ears short-coated, and colored like the surrounding parts; tail bicolor, hair brown above, white below, with a conspicuous terminal pencil. Young, slate-gray above, with the faintest possible tinge of fawn color on cheeks. The adult pelage is sometimes acquired on the under parts

before the animal is more than one-half grown. Young are born throughout the year.

Seasonal variation. — Examination of a series of more than ~~one hundred and fifty~~ 115 specimens, from the Elevated Central Tract of the boundary strip, in which every month from May to December is represented, shows ~~that~~ the seasonal changes in coloration to be slight, ~~compa~~ in comparison with those of some species of the genus Peromyscus. There is, however, a ~~characteristic~~ ~~late~~ summer coat, ~~reddish~~ cinnamon-colored coat, ~~acquir~~ acquired late in the summer, which appears quite different from the winter coat. This however is extremely evanescent, for it is scarcely acquired before it ~~no sooner acquired than shifted replaced by the~~ begins to be replaced by the ~~six-crossing~~ winter pelage, which

comes in from before backward, on the upper surface. The winter coat of adults is always complete in November and December, and there is no change, ~~beyond~~ more than the wearing away of the tips of the hairs and a general fading, before ~~the end of~~ June. A good series taken in May shows no indications of a spring ~~moults~~ moult; but in July, or, sometimes, late in June, moulting commences, and the coat grows shabby and ragged. In August, which is still another month of change and shedding, the pelage receives a reddish cast as the ~~transcient~~ transient summer coating comes to predominate, late in the month, by which time some individuals are already receiving the drab winter coating. It is exceptional ~~to find a~~ for ~~one~~ one to appear with the ~~coat~~ completed

probably
summer coat, because the winter coat ~~is~~
begins to ~~take the~~ replace that of summer
before the latter has been perfected. By the
end of September the drab winter coloring
predominates; October specimens showing but
slight traces of the more reddish summer
pelage, and those taken in November none
at all. It is, perhaps, unnecessary to add
that the ~~summer~~ winter coat is longer, denser,
and less rigid than that of summer, besides
being more grayish.

Measurements. — Average of 55
adult males: length, 196.3 mm.; tail
vertebrae, 105.8; length of hind foot, 21.2; ear
from crown, 16.3. Average of 45 adult
females: length, 198.1; tail vertebrae, 105.7; hind
foot, 21.2; ear from crown, 16.2

Cranial and dental characters. — The skull is appreciably broader and lower than that of Peromyscus boylii (typical), with a much shorter and wider interpterygoid fossa. In size and other respects they are much the same, both having the nasals ending in a point, ~~posteriorly~~ flush with the premaxillaries, posteriorly.

Remarks. — Eight specimens ~~from the Huachuca Mountains, have white-tipped tails~~ (Nos. 215531, 215594, 21605, 21602, 215586, 21611, 21606, and 215588, U. S. National Museum) from the Huachuca Mountains, have white-tipped tails. The terminal white portion occupies from 10 to 50 millimeters of the end of the tail. In five of the eight the whole tip of the tail is white, while the remaining three have the terminal pencil dark, and a subterminal band of white. I have noticed a tendency,

(P. l. pinalis —

especially mice,
in other alpine mammals, to have white-
tipped tails at the ~~upper~~ highest altitudes
of their range. Another specimen of the
present series (No. 21600, U.S. National
Museum) has a small white spot on the
rump, showing a further tendency to albinism. The
white tail-tips are probably not due to
freezing, as some specimens having white-
tipped tails were too young to have experienced
severe frosts ~~at the season~~ prior to the date
of their capture, in early autumn.

Peromyscus eremicus (Baird).

Western Desert Mouse.

Hesperomys eremicus, Baird, Mamm. N. Am., 1857, pp. 479, 480, (original description); Rep. U. S. and Mex. Bound. Surv., II, pt. II, Mamm., 1859, p. 44.

This species, including its several subspecies, was found by us on the boundary-line from the Rio Grande at El Paso, Texas, to the edge of the Pacific Ocean; and a related ~~species~~ insular form was collected on Tiburon Island, in the Gulf of California, by Mr. J. W. Mitchell. The species was originally described by Professor Baird from specimens collected by Major (afterwards Major-General) G. H. Thomas, U. S. Army, and Mr. Arthur Schott, a naturalist of the earlier Mexican boundary survey, in the vicinity of Fort Yuma, on the California side of the Colorado River. During the recent survey of the Mexican line, we obtained a good ~~series~~ series of topotypes of Peromyscus eremicus from Fort Yuma, San Diego County, California; from Yuma, Arizona; and from the Colorado river-bottom below

the mouth of the Gila River, on both sides of the Colorado River. These were compared with Professor Baird's types of eremicus (especially No. "1334. Colorado Bottom, Cal. A. Schott"), and found to be the same. Having definitely de=termined the form of this species which Baird described as Hesperomys eremicus, it has been possible to describe other species and subspecies of the Desert Mice group, and to assign geographic ranges to the subspecies of P. eremicus inhabiting the boundary-line strip.

It would be difficult to frame a better description of the external characters of this beautiful species than Baird gave in his original account of it; but he neglected to say anything respecting its skull and teeth, though the cranial and dental characters of the group of Desert

Mice typified by Peromyscus eremicus are very characteristic. Mr. Gerrit S. Miller, Jr., in his description of the subspecies fraterculus *, directed attention

* [illegible] in this paper.

to the peculiar form of the nasals, and their relations to the premaxillary and frontal bones, together with the peculiar shape of the brain-case. Still later, the writer * described * characteristic

* Proc. U. S. Nat. Mus., ~~XVIII~~ XIX, No. 1103, 189–~~[illegible]~~ p. 138 (p. 2 of advance sheets, issued May 25, 1896).

differences in the tuberculation and in the enamel pattern of the grinding surface of the middle and anterior molar teeth.

Subspecies eremicus.

Type locality.—Old Fort Yuma, San

Diego County, California. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — Tropical and Lower Sonoran zones of the Western Desert Tract.

Description. — In the typical form (subspecies *neremicus*), the soles of the hind feet are naked to the heel; tail longer than head and body, not distinctly bicolor, slender, scantily haired, and tapering to a fine point; ears large, nearly naked, thin, membranous, and exceedingly sensitive. Color above grayish drab, tinged with ochraceous, and not much darkened by black-tipped hairs; sides, cheeks, and rump ochraceous buff; top of head paler and grayer than the back, which has no dark vertebral area; feet and under parts pure white. In winter the coloring is darker than in summer.

The young retain the gray coloring which they are born with until they are two-thirds grown, when a coating of ochraceous and drab, duller than that of adults but otherwise much the same, is gradually acquired, appearing at first as a dull ochraceous band along the sides, extending over the back at a later period. Five of these young Desert Mice, in the mixed pelages of the young and adult, were described by Doctor Merriam* as a distinct species — "Hesperomys (Vesperimus) Anthonyi" — with the statement that three of them were adults, and that "in coloration, proportions, and cranial characters this mouse differs so radically from all previously known species, that comparison

* Proc. Biol. Soc. Wash., IV, April 15, 1887, pp. 1–3.

with others is unnecessary." Fortunately the name anthonyi can stand for the larger and darker subspecies of Peromyscus eremicus inhabiting the Elevated Central Tract, between the Eastern and Western deserts.

Cranial and dental characters. — (Plate —) The skull is low and flat, with a short rostrum, and truncate nasals ending posteriorly considerably in front of the hinder extremities of the nasal premaxillaries. The brain-case, though short and flattened, is not so to the exaggerated degree of P. ~~auricupectus~~ auripectis, in which it is almost disc-shaped. The outer border of the first and second upper molars have but three salient and two re-entrant loops or enamel folds (Fig. —).

Peromyscus eremicus anthonyi (Merriam).

Apache Desert Mouse.

Hesperomys (Vesperimus) Anthonyi Merriam, Proc. Biol. Soc. Wash., IV, April 15, 1887, pp. 1–3 (original descrip=tion; based on a young individual, with long ochraceous hair on the sides).

Type locality. — Camp Apache, Grant County, New Mexico, near monument No. 40, Mexican boundary line. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — Sonoran Zone of the Elevated Central ~~Tract~~ or Apache Tract, between the Eastern and Western deserts.

Description. — This slight geographical race of Peromyscus eremicus differs from the typical form in being larger, darker, with brighter ochraceous coloration, and smaller ears. From the varied character of its habitat this subspecies is less uniform in size, coloration, and proportions than the other forms of eremicus. Specimens from the strip of country between the Mimbres Valley and the San Luis Mountains the ear is decidedly ~~shorter~~ smaller than that of typical eremicus. West of the San Luis Mountains the ear, increase in size is relatively larger and the coloration, as a rule, is darker. ~~Except~~ In the canyons at the head of the Yaqui River ~~where~~ a small, dark-colored phase was found which may prove to be worthy of separation

P. s. nelsoni

, if further differentiated

as a subspecies, in the lower Yaqui River Tract. In this connection I have examined two specimens from Aposura, Sonora, (Nos. 8816 and 8817, Amer. Mus. Coll., Nat. Hist., N. Y.), forwarded to me by Dr. J. A. Allen. These are the darkest ones seen, and somewhat larger than two from Guadalupe Canyon (Nos. 5'8878 and 5'8879, U.S.N.M.), on the international line at the head of the Yaqui ~~Basin~~. These four ~~are~~ are much like P. tiburonensis, a species inhabiting Tiburon Island, in the Gulf of California, near the mouth of the Yaqui River.

1

Peromyscus eremicus arenarius Mearns.

Eastern Desert Mouse.

Peromyscus eremicus arenarius, Mearns, Proc. U. S. Nat. Mus., ~~XVIII~~ XIX, No. 1103, 189–, p. 138 (p. 2 of advance sheets, issued May 25, 1896).

Type locality. — Bank of the Rio Grande, about six miles above El Paso, Texas. (Type, skin and skull, in the U. S. National Museum.)

Description. — Similar to Peromyscus eremicus (typical), but paler, with the pelage grayer and more silky, and the ears smaller. The upper surface is pale ochraceous drab finely mixed with black, without a darker median area; ears almost naked, but with a slight pubescence on the convex surface; tail dusky drab mixed with hoary above, pure white below; under parts and feet pure white. The head is somewhat grayer; and there is a dusky orbital ring. ~~The skull~~

Cranial and dental characters. — The skull (Plate — —) is longer, and narrower in front than in the more

western forms of P. eremicus, with the rostrum somewhat longer. The outer border of the anterior and middle upper molars have but three salient and two re-entrant loops or enamel folds, as is usual in the group of Desert Mice. The subsidiary (often paired) marginal cusps, usually present in Peromyscus, are obsolete in the eremicus group; and they are wholly wanting in the genus Onychomys.

Peromyscus stephensi Mearns.

Palm Desert Mouse.

Peromyscus stephensi, Mearns, Proc. U. S. Nat. Mus., XIX, 1897, p. 721 (original description).

Type locality. — Lowest water, on the wagon road, in a canyon, at the eastern base of the Coast Range Mountains, San Diego County, California, near the Mexican boundary line. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — Lower California Tropical or Palm Tract, along the east base of the Coast Range Mountains.

Description. — Similar externally to Peromyscus eremicus (Baird), but smaller, with a longer tail and much paler coloration. Upper surface grayish cream buff, deepening to pale ochraceous buff on sides and rump; tail slightly dusky above, white below, hairy at end; feet and under surfaces white; whiskers mostly colorless; ears and soles naked, the former slightly pubescent. Length,

193 mm.; tail vertebrae, 108 (to end of pencil, 114); ear from crown, 16; ear from notch, 18.5; length of head, 26.5; length of hind foot, 19. Skull, — by —.

Cranial and dental characters. — The skull (~~Plate~~ Plate ——) is strongly depressed anteriorly, with the rostrum produced and the nasals projecting. The zygomatic arches are incurved and convergent anteriorly to meet the sloping zygomatic processes, this feature recalling the configuration of young skulls of the other species of Peromyscus (Fig. —), in which the brain-case has outgrown the face, though in this case we have the opposite condition, the facial portion being unusually elongated. In P. stephensi the profile of the skull is nearly straight above, declining to the front. The skull is remarkably narrow interorbitally.

1

Peromyscus tiburonensis Mearns.

Tiburon Island Desert-Mouse.

Peromyscus tiburonensis, Mearns, Proc.
U. S. Nat. Mus., XIX, No. 1121, 1897, pp.
720, 721 (original description).

P. tiburonensis

Type locality. — Tiburon Island, Gulf of California, Mexico. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — An insular form, known only from ~~Tiburon~~ the type locality (Tiburon Island).

Description. — Smallest of the Desert Mice, with the possible exception of Peromyscus stephensi, which has a much longer tail. Length of hind foot, 19 mm.; ear from notch, 16. Skull, 24 by 12. Color above, drab gray, thickly mixed with black; sides ochraceous cinnamon; under surfaces and feet, white; ears purplish black, almost naked; tail quite densely coated with blackish hairs.

Cranial and dental characters. — Compared with Peromyscus eremicus (Baird) its skull is smaller, higher

posteriorly, narrower and more depressed anteriorly. The audital bullae are much less developed, and the incisive foramina and interpterygoid fossa wider. The teeth (Fig. ——) are considerably smaller.

Remarks. — This species was taken on Tiburon Island, by Mr. J. W. Mitchell, who accompanied Mr. McGee, of the Bureau of Ethnology, on his exploration in the region inhabited by the Seri Indians, during the season of 1895–'96; although occurring beyond the scope embraced by the present report, the species is here introduced for the purpose of completing the history of the Desert Mice that are closely related to Peromyscus eremicus. This insular form was evidently derived from P. eremicus of the adjacent mainland, from which it differs in being smaller with a darker coloration, more hairy tail, and in having certain cranial peculiarities, described above.

1

Peromyscus mearnsii (Allen).

Mearns Mouse.

Vesperimus mearnsii, Allen, Bull. Am. Mus. Nat. Hist, III, No. 2, Art. XX, June 30, 1891, pp. 300-302 (original description).

Sitomys mearnsii, Bryant, Zoe, III, October, 1892, p. 214. — Allen, Bull. Am. Mus. Nat. Hist., VI, May, 1894, pp. 179-181.

Type locality. — Brownsville, Texas. (Type, skin and skull, in the New York American Museum of Natural History.)

Geographical range. — This species inhabits the Tamaulipan Tropical Tract, in southern Texas, where it has been found, along the Gulf of Mexico, in the strip of country extending from Rockport to Brownsville.

Description (based on seven topotypes) — Upper surface dusky grayish brown, suffused with fawn color, which is strongest on the sides; under parts pure white in winter, grayish white in summer; tail long, nearly naked in summer, not distinctly bicolor; ears large and nearly naked; feet whitish, with soles hairy to the tubercles. Length, 190 mm.; tail vertebrae, 95; ear from crown, 14; length of hind foot, 21. Skull, ~~13.7~~ 26 by 13.7.

The young, when quite small, are slate gray above, and grayish white below, with a black patch occupying the anterior third of the convex surface of the ear.

Cranial and dental characters. — The skull and teeth of Peromyscus mearnsi (Fig. —) indicate a species allied to, but specifically distinct from P. leucopus. The skull is smaller than that of P. canus, from which it also differs in shape.

Remarks. — This Mouse differs from P. canus, its next neighbor on the west, in ~~having~~ being more scantily (coated) ~~clothed coated, with shorter and less longer, and less hairy tail coated, with the tail longer, less hairy, and less sharply bicolored~~ throughout, especially as to its tail, which is much longer than that of P. canus, and differs further — in not being sharply bicolor.

Peromyscus canus Mearns.

Texan Gray Mouse.

Peromyscus canus, Mearns, Proc. U. S. Nat. Mus., XVIII, No. 1075, 1896, p. 445 (p. 3 of advance sheet, issued March 25, 1896.). —— Allen, Bull. Am. Mus. Nat. Hist., VIII, Art. V, April 22, 1896, pp. 64, 65.

Type locality.— Fort Clark, Kinney County, Texas. (Type, skin and skull, in the U.S. National Museum.)

Geographical range.— Inhabits the Sonoran Zone of the Middle Texas Tract. It has been found at San Antonio (Attwater), and from Bee County to Kinney County, along the Rio Grande.

Description.— Similar in proportions to Peromyscus leucopus (Rafinesque). Color above drab-gray, with a dark vertebral area, where the pelage is thickly lined with black. Feet, and under parts, pure white; tail bicolored, blackish above, white below; ears and tail well coated with hair; soles of feet densely pilose posteriorly.

The young, which are born at all seasons of the year, are slate-gray, with whitish under parts, bicolored tails, and

the usual black spot on the ear. The young acquire the adult pelage in precisely the same manner that Peromyscus eremicus does (see page ——), it commencing on the under surface, extending to the flanks, and thence across the middle of the back, leaving the rump and nape to be covered last. Length, 175; tail vertebrae, 75; ear from crown, ~~11.5~~ 12; hind foot, 21. Skull, 26.5 by 13.5. Teats, $\frac{1-2}{1-2}$.

Cranial and dental characters. — The skull (Pate ——) is narrow, slender and rectangular, with the brain-case low and elongated, and the rostral portion long.

Remarks. — This

Remarks. — This mouse, though similar in appearance to Peromyscus mearnsii, Allen, may be readily distinguished from that species by its smaller, more hairy ears, and its much shorter, more hairy, and sharply bicolored tail, as well as by its longer fur at all seasons. The skull of P. mearnsii is smaller, and has a more swollen brain-case, shorter and more depressed rostrum, and shorter pterygoid ~~and ~~sal~~~ fossa, ~~and~~ and interpterygoid notch. ~~and~~ Perhaps the dentition is also a little heavier. Compared with P. leucopus, the skull is lower and more slender, with a corresponding shortening of the brain-case, pterygoid fossa, and rostrum. In the vicinity of San Antonio, Texas, Peromyscus canus and P. texanus occur together.

Peromyscus tornillo Mearns.

Tornillo Mouse.

Peromyscus tornillo, Mearns, Proc. U. S. Nat. Mus. XVIII, No. 1075, 1896, pp. 445, 446 (p. 3 of advance sheets, issued March 25, 1896).

P. tornillo

Type locality. — Rio Grande bottom-lands, six miles above El Paso, Texas. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — An inhabitant of the Eastern Desert Tract. Known only from the bottom-lands of the upper Rio Grande, living in forests of tornillo or screw bean (Prosopis odorata). There are specimens in our collection from Texas, New Mexico, and Chihuahua.

Description. — A large, stout species; ears and tail well haired, the latter sharply bicolored; soles densely pilose posteriorly. Upper surface light broccoli brown; ears and upper side of tail hair brown; feet and under parts pure white. Length, 190 mm.; tail vertebrae, 90; ear above crown, 12; hind foot, 23. Skull, 29 by 14.5.

P. tornillo

Cranial and dental characters.—The skull of this Mouse (Plate ——) is at once distinguished from all other Texan Mice of this genus by its larger size.

3a

~~larger size~~. The animal bears a superficial resemblance to the P. arizonae, recently described by Doctor J. A. Allen, from Fairbank on the Dan Pedro River, in Arizona. Externally it is distinguished from that species by its paler coloration, slightly smaller ears, and stouter body. The largest skulls of P. arizonae equal the average size of P. tornillo, but the teeth are smaller. The shape, however, is different. In both of these species, the rostral portion is long and high, this character sufficing to distinguish ~~these~~ them species from ~~some~~ any of the forms of P. texanus. The skull of P. tornillo is low and squarish, with the superior profile but slightly arched, and its zygomatic arches standing strongly out in front, as sharp elbows at right

angles to the cranial axis. The upper molar teeth of P. tornillo have the subsidiary cusps, especially those of the anterior upper molars, more or less obsolete (see Pl. —, fig —), whereas they are distinct in P. arizonae.

The above description is based on fifteen adults taken near El Paso, Texas, in February and March. An immature female (No. 21058 36100, U.S. National Museum Coll., International Boundary Commission), taken by the writer at Fort Hancock, Texas, June 16, 1893, is mouse-gray where the juvenile coat is retained, the sides and forehead being smoke-gray. Two specimens from the Upper Corner Monument (No. 40), Mexican boundary line, are essentially like those from the vicinity of El Paso.

Peromyscus arizonae (Allen).

Apache Wood Mouse.

Sitomys americanus arizonae, Allen, Bull. Am. Mus. Nat. Hist., VI, Art. XIII, November 7, 1894, pp. 321, 322 (original description).

Type locality. — Fairbank, about 20 miles north of the Mexican border, on the San Pedro River, Arizona. (Type, skin and skull, in the New York American Museum of Natural History.)

Geographical range. — The habitat of Peromyscus arizonae is the wooded banks of streams of the Elevated Central Tract. Specimens were taken on the San Bernardino, San Pedro, and Santa Cruz rivers, along the boundary-line; and on the Verde River, in central Arizona. At present it is known only from the wooded streams of Sonora and Arizona, never having been taken in open or rocky country, away from water.

Description. — A large, rather stout Mouse. In winter the upper surface is tawny wood brown, mixed with gray and

black; middle area above considerably darker than the sides; feet and under parts pure white; under pelage slate-gray; tail sharply bicolor, ~~black~~ clove brown above, white below; ears scantily clothed, drab, without distinct hoary edging. In summer the coat is drab, lacking the tawny shade of winter; and the under surface shows much of the gray basal portion of the hair between the narrow points. The young are mouse + gray, and may be born at any season of the year, those of winter having longer pelage than in summer. The mammæ are $\frac{1-2}{1-2}$. Length, 185 mm.; tail vertebræ, 85; hind foot, 23. Skull, 28 by 14.5.

Remarks. — The nearest relative of this species is the Peromyscus tornillo,

from which it is separated, on the boundary-line, by the San Luis Mountains and scorched plains — to its impassable barriers. This Mouse is probably of Mexican origin, and, south of the United States border, these two species (P. tornillo and P. arizonae) may come together and intergrade, in which case P. tornillo would become a subspecies of P. arizonae. The size of the two species is about the same, though P. tornillo appears to be the stoutest, and has a smaller ear, more massive skull, and larger teeth, with a peculiarity of the anterior upper molar, in which the intermediate marginal subsidiary cusp is obsolete; and the coloration is much paler.

I have compared the specimens of this species in our collection (see table)

with the type of Sitomys americanus arizonae of Allen, and find that they are unquestionably the same.

Subgenus Baiomys True (1894).

(Taylor Mice.)

"Ascending ramus of mandible short and erect. Condyle terminal. Coronoid process well developed, uncinate, and near the condyle. Size very small, tail short. Plantar tubercles, six. Soles hairy." (True.)

Type, Hesperomys (Vesperimus) taylori, Thomas, from San Diego, Texas.

Peromyscus taylori (Thomas).

Taylor Mouse.

Hesperomys (Vesperimus) taylori, Thomas, Ann. and Mag. Nat. Hist., 5th series, XIX, 1887, p. 66 (original description).

Cricetus (Vesperimus) taylori, Thomas, Proc. Zool. Soc. Lond., 1888, p. 446.

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Sitomys (Baiomys) taylori, True, Proc. U. S. Nat. Mus., XVI, No. 972, pp. 757, 758.

—— Allen, Bull. Am. Mus. Nat. Hist., VI, May 31, 1894, p. 181.

Peromyscus (Baiomys) taylori, Allen, Bull. Am. Mus. Nat. Hist., VIII, Art. V, pp. 65, 66.

Type locality. — San Diego, South Texas. (Type in the British Museum.)

Geographical range. — Tamaulipan Tropical Tract (Rockport, Brownsville, San Diego, and 15 miles south of San Antonio, Texas).

Description. — The smallest known North American Peromyscus. In no wise closely related to any other described species from the United States, but closely related to Sitomys musculus, Merriam, from near Colima City, Mexico.* Length of head and body, 53 mm.;

*Described in Proceedings of the Biological Society of Washington, VII, September 29, 1892, pp. 170, 171.

tail vertebrae, 32; hind foot, without claw, 13; ear above crown, 5. Skull, 18 by 10. Coloration somewhat similar to that of Mus musculus, but without the salmon tint

beneath. The upper surface is brownish gray and the under parts grayish white. The tail is scantily haired, and not distinctly bicolor.

Cranial and dental characters. — In addition to the generic characters pointed out by Mr. True (l. c. p. —), the dentition is also peculiar. The molar tubercles are paired, though not always exactly opposite. As they are ground down with wear, the enamel patern of the grinding surfaces assume almost a lozzenge shape (Figs. —). The ~~skull~~ skull, also has an unusual ~~form~~, shape, which is shown in plate — , figs. — — .

Peromyscus michiganensis pallescens, Allen.

Pallid Mouse.

Peromyscus texanus, Allen, Bull. Am. Mus. Nat. Hist., VIII, 1896, p. 64 (not of Waterhouse).

Peromyscus michiganensis pallescens, Allen, Bull. Am. Mus. Nat. Hist, VIII, Art. XIV, Nov. 21, 1896, pp. 238, 239 (original description).

Type locality. — San Antonio, Texas. (Type, skin and skull, in the New York American Museum of Natural History.)

Geographic range. — The typical subspecies is known only from ~~S~~ the vicinity of San Antonio, Texas. Kansas specimens are intermediate between the subspecies michiganensis and pallescens.

The following is Doctor Allen's description of this subspecies, which is known only from the type series:

"Adult. — etc. Copy from book p. 238

Peromyscus texanus (Woodhouse).

Texan Plains-Mouse.

Hesperomys texana, Woodhouse, Proc. Acad. Nat. Sci. Phila., VI, No. VII, February, 1853, p. 242 (original description); Report of an Expedition down the Zuñi and Colorado Rivers, by Captain L. Sitgreaves, 1853, pp. 48, 49, pl. 2.

Arvicola (Hesperomys) texana, Audubon and Bachman, Quad. N. Am., III, 1854, p. 319.

Hesperomys texanus, Baird, Mamm. N. Am., 1857, p. 464.

Hesperomys leucopus texanus, Mearns, Bull. Am. Mus. Nat. Hist, II, art. XX, February 21, 1890, pp. 285–287 (Oklahoma).

Peromyscus texanus, Mearns, Proc. U. S. Nat. Mus., XVIII, No. 1075, 1896, p. 445.

~~Six~~ Seven years ago, when treating of the western short-tailed species of Peromyscus, then commonly styled the "Sonoriensis group"*, I referred the forms arcticus,

* Because Dr. Elliott Coues, in his monograph of the North American Muridae, published in 1877, had grouped around Le Conte's "Hesperomys sonoriensis" not only those of the forms (here) under consideration (that were) then known, but, also, several additional species which are totally distinct from them, treating the whole assemblage of species and geographical races under the head of "Hesperomys leucopus sonoriensis".

nebrascensis, texanus, sonoriensis, and deserticola, as subspecies, to Hesperomys leucopus, Rafinesque. I now regard this course as illogical, because their

intergradation with P. leucopus was merely assumed to be a fact, and not proven. I am convinced that our trinomial system of nomenclature will only impede our progress, and come to be a hindrance, unless the rules upon which the system is founded be so rigidly adhered to as to make it an accurate index to our knowledge of the steps in the evolution of recent species. From this standpoint, I have lately reëxamined the members of what must now be designated the "Texanus group" = (since the publication of Woodhouse's Hes- =peromys texanus antedates that of Le Conte's Hesperomys sonoriensis) and have failed to trace any connection between them and P. leucopus through intergrading forms.

It is not denied that such intergradation may actually occur, as was inferred in my previous paper*; but the limited series of specimens of the genus Peromyscus

*Bull. Am. Mus. Nat. Hist., II, 1890, pp. 284-287.

in the collection of the U. S. National Museum furnish no evidence of it. On the contrary, comparison of series of specimens of P. leucopus from Minnesota with the form nebrascensis occupying the adjacent plains of Dakota, shows the two to be very distinct in both external and cranial characters. Similar comparisons of specimens from Kansas with those from Nebraska, and of series from Indian Territory with series from Oklahoma, furnish no evidence of intergradation. The trans-Mississippian series of P. leucopus

(Minnesota to Indian Territory), show ~~scarcely any~~ but slight little geographical variation; while the opposite campestrian forms, on the west, show a wide range of variation. Indian Territory furnishes nearly typical examples of P. leucopus; but these specimens — from Fort Cobb — are much more closely related to the P. canus than to P. texanus from the same region.*

*Peromyscus canus and P. texanus occur together, in the vicinity of San Antonio, Texas.

Dr. Woodhouse states, in both his preliminary ~~descr~~ and final descriptions of this Mouse, that his type came from western Texas, on the Rio Grande, near El Paso. I have examined the alcoholic type (No. $\frac{2559}{37026}$, U.S.N.M.) (No. $\frac{4748}{37155}$, U.S.N.M.) and another specimen, labelled in Professor Baird's handwriting "Hesperomys texana. W. Texas. Dr. Woodhouse"

These ~~#~~ two specimens belong to ~~are~~ one species, the same described below. Both contained skulls, which Mr. F. W. True, curator of mammals at the U. S. National Museum, kindly caused to be removed for examination, and they are now preserved separately.

Subspecies texanus.

Type locality. — "I procured this little animal on the Rio Grande near El Paso." (S. W. Woodhouse.) (Type, skin, in alcohol, and fragments of skull, in the U. S. National Museum.)

Geographical range. — Sonoran Zone of the Eastern Desert Tract. From the Guitman Mountain, ~~in~~ Texas, west to the Hachita Mountains, New Mexico, and southward into Mexico; intergrading with Peromyscus texanus nebrascensis to the northward.

(3) Description.—An adult male (No. 21177, U. S. National Museum), taken 50 miles west of El Paso—the type locality, ~~of~~ ~~Brown~~ on the Mexican line, March 21, 1892, closely resembles the type skin (No. 4748/37155, U. S. National Museum) collected by Doctor Woodhouse. It is in winter pelage. Size small. Length, 160 mm.; tail vertebrae, 68; ear above crown, 14.5; length of hind foot and claw, 21.5. Ears small, with a sanguineous tuft at anterior base; tail short, hairy, and sharply bicolor, but without a distinct pencil at tip (Fig. —). Color above ochraceous drab, grayish anteriorly, deepening laterally and posteriorly to ochraceous cinnamon, finely lined with black, most thickly in the vertebral area; rump and feet and under surface pure white; ears seal brown, with a mixture of ivory on edges and within, and long-haired in a patch occupying the anterior portion of the convex surface; tail white, with a narrow stripe of clove brown on upper side, extending from base to tip. Soles densely hairy, from the heel to the tubercles. ~~Young specimen~~ The young are gray above, white below, with a conspicuous slate-black patch on the anterior half of the convex surface of the ear. Of twenty-two grown specimens taken between the Rio Grande and the San Luis Mountains, on the Mexican line, March 21 to June 1, and one in September, but three were in the fulvescent pelage, the rest varying from pale smoke gray to drab-gray, several being more or less intermediate between the grayish and ochraceous phases of coloration. This specimen has a decided leaning towards the genus Cynomys. Its

P. texanus

Start a page

Cranial and dental characters. - As the members of ~~this~~ the Texanus group have long been considered to ~~be identical~~ be specifically identical with Peromyscus leucopus (Rafinesque), I will (just) compare P. texanus with that species: I am able to detect but slight differences between series of skulls of P. leucopus from the District of Columbia and other eastern localities (the same species) and series of ~~from the wooded forested portions of Minnesota~~ from Fort Snelling and Elk River, Minnesota. Comparing series of skulls of P. leucopus from the forested areas of southern and western Minnesota (Fort Snelling and Elk Rivers), with nine skulls of P. texanus nebrascensis from the adjacent plains of South Dakota, the following differences are found: ~~The~~ The skull of P. t. nebrascensis is smaller; its zygomatic arches are more nearly

parallel to the cranial axis; rostrum relatively shorter, with broader nasals; massive foramina longer; and the mandible shorter, with a remarkable reduction in the length of its condyloid process, while its coronoid is more developed. Comparing the skulls of the several forms of Peromyscus texanus from the boundary strip together, the Texas specimens are seen to be considerably the smallest; P. t. sonoriensis is larger; ~~and~~ P. t. deserticola and P. t. clementis are decidedly the largest, deserticola being broader and more massive than clementis; ~~and~~ and medius, while smaller than clementis, agrees with it in being narrower and less massive than deserticola.

Remarks. — Seven adults of this species, taken in Oklahoma, in October and November, are all in the "red" coat, and are much more ochraceous than typical P. texianus. They somewhat resemble P. aureolus, as Baird has previously remarked, in speaking of certain specimens which he identified as P. texanus. This Oklahoma series, collected by Mr. Jenness Richardson, has been recently sent to me for reëxamination by Doctor J. A. Allen, from the collection of the American Museum of Natural History, New York. It constitutes a local phase of this species, somewhat intermediate between true P. texianus an P. texianus nebrascensis, but differing in coloration from either. ~~It combines, to some extent, the characteristics~~

P. Texanus

~~Of the forms of the~~. Peromyscus texanus has a decided leaning towards the coloration in genus Onychomys. Its ~~coloration~~ and the texture of the furry coat are very suggestive of Onychomys. Added to this, it has the coronoid process of the man=dible hooked, and longer than usual; the posterior pair of tubercles on the soles of its hind feet reduced in size (in Onychomys these are wanting); and the soles densely furred to the tubercles.

Peromyscus texanus sonoriensis (Le Conte).

Sonora Plains-Mouse.

Hesperomys sonoriensis, Le Conte, Proc. Acad. Nat. Sci. Phila., ~~Vol.~~ VII, No. XI, October, 1853, p. 413 (Santa Cruz, Sonora, Mexico).—Baird, Mamm. N. Am., 1857, p. 474 (in part); Mex. Bound. Surv., ~~Zoology~~, 1859, ~~Mamm.~~ p. 43 (in part)

Hesperomys (Vesperimus) leucopus sonoriensis, Coues, Proc. Acad. Nat. Sci. Phila., 1874, p. 179 (in small part); Mon. N. Am. Rodentia, 1877, p. 79 (Sonoran references only).

Peromyscus leucopus sonoriensis, Allen, Bull. Am. Mus. Nat. Hist., ~~New York, Vol.~~ VII, ~~Article~~ VI, June 29, 1895, p. 229 (in small part).

Type locality.—Santa Cruz, ~~as~~ old Mexican town, on the Santa Cruz River, in Sonora, about six miles south of monument No. 111,

P. t. sonoriensis

Mexican boundary line. Le Conte, in his original description of (l. c. p. 413)
this race, states that it was "collected by the Boundary Commission, under Major Graham"; and Professor Baird tells us (l. c. p. 475) it was "characterized as H. sonoriensis by Major Leconte from specimen 146 of the Smithsonian collection". The skin and skull labelled "Hesperomys sonoriensis" in what is supposed to be Le Conte's handwriting
of this specimen (No. 146/1128, U.S.N.M.), which is undoubtedly the type of Hesperomys sonoriensis, Le Conte, and has always been so considered, are now before me. I have compared this type with topotypes which I collected at the places
town of Santa Cruz, and at other in Arizona and Sonora, on the Santa Cruz River, and find them to be the same — the animal described below:

Description. — Selecting, from an abundance of material, a fine adult male (in winter pelage, 20785 No 35890, U.S. Coll. International Boundary Commission) Arizona, N. M., collected by F. X. Holzner, at Lochiel, on the Santa Cruz River, a few miles north of the type locality, December 5, 1892, it is seen to be larger and darker in color, with larger ears than the typical P. texana. The upper surface is wood brown, thickly lined with black. The lanuginous tuft at anterior base of ear is whitish; the dark spot on its outer surface distinct. The pelage is very long and dense, the tail well haired and sharply bicolored. An old female (No. 21171 36138, U.S. N. M. Coll., International Boundary Commission), taken on the San Pedro River, October 16, 1892, is in short summer pelage, except on the muzzle, where though the winter coat is coming in. The ears, feet, and tail are much more scantily coated with hair than in winter; and the color of the upper surface is drab. The

P. t. sonoriensis

Some specimens in summer pelage are more yellowish.

new hair on the muzzle is more yellowish. ~~The~~ An immature specimen (No. 5-8757, U.S.N.M. Coll., International Boundary Commission) taken at the town of Santa Cruz, Sonora, October 21, 1893, is like the type. It is gray, tinged with drab, whitish below.

Dr. J. A. Allen has already called attention to the darker coloration of ~~the~~ specimens ~~of this~~ ~~lot~~ from San Bernardino Ranch, at the head of the Yaqui River system; and our specimens from that locality are also darker than usual, with the exception of No. 21327, which is curiously albinistic. In the vicinity of monument No. 77, of the Mexican line, on the San Bernardino River, these mice were semi-aquatic, living except the aquatic vegetation beside the stream. Such ~~specimens~~ individuals were unusually dark; but, on the adjacent high ground, nearly typical examples of

of P. t. donorivensis were trapped. I am indebted to Dr. Allen for sending on the American Museum series for comparison with ours. While this dark form is recognizably ~~distinct~~ different from true donorivensis, I have preferred for the present, as in the case of the ~~dark~~ peculiar phase P. eremicus from the same region, to wait until the Yaqui Basin tract can be further explored, ~~before~~ rather than name its peculiar forms from specimens from its terminal twigs, without being able to assign definite geographic ranges to its subspecies.

~~Basins~~ Basins of the lower Gila and Colorado rivers and head of the Gulf of California, west to the Coast Range of California.

Peromyscus texanus deserticola (Mearns)

Western Desert Plains-Mouse.

Hesperomys leucopus deserticolus, Mearns, Bull. Am. Mus. Nat. Hist., ~~New York~~, Vol. II, ~~article~~ XX, February 21, 1890, pp. 285–287.

Sitomys insolatus, Rhoads, Proc. Acad. Nat. Sci. Phila. ~~Vol.~~, 1894, pp. 256, 257. (Type from Oro Grande, Mohave Desert, Kern County, southern California).

Type locality.—Mojave Desert, California.

In 1890, I described the Western Desert form as a subspecies of *Peromyscus texanus*. Four years later it was redescribed by Mr. S. N. Rhoads, from a topotype, as a species—*Sitomys insolatus*—, and the subgeneric name of *Trinodontomys* proposed for it, on account of "the trefoil character of the first upper molar." Mr. Rhoads has, very kindly,

P. typ. dec. Feb.

sent me the type of his Setonyx (Trinodontonyx) insolatus for examination, and it proves to be exactly like the type of my Hesperonyx which came from the same region, and Leucopus desertícolus, with which it must, I think, be synonymized. I cannot agree with Mr. Rhoads in associating it with the subgenus Baionyx; and the alleged trefoil character of the first upper premolar, upon which the subgenus Trinodontonyx was founded, is the result, partly of accident, but principally of age. In the accompanying figure (see fig.) the anterior upper molar of three individuals of different ages are outlined. In one (a), the type of insolatus, which is but slightly worn, there are two enamel folds with the resulting trefoil pattern of the anterior enamel loop; another of Mr. Rhoads's specimens (b), which has been worn down to a lower plain, one groove has also been

(3) (P. texanus texana)

ground out, so that this loop appears asymmetrical; a third specimen (c) exhibits a section of this tooth at a still lower plane, all of the cusps having been ground away. The trefoil pattern of the crown is commonly seen of the upper first molar in young individuals of several species of Perognathus, the pattern ever changing as the cusps and tubercles forming the crown of the tooth are gradually worn away

Description.- This is a large, stout, long-tailed, desert race of P. texanus, of which extreme examples are found on the deserts bordering the lower Colorado River. These specimens have massive skulls, thick tails, and stout feet. No. 60121, U.S.N.M., an old female in winter pelage, taken on the lower Colorado in March, is ochraceous cinnamon, slightly mixed with black above, and pure

4 P. leu. sonoriensis

ears dusky, with lanuginous tuft at base colored like the head. White below; Summer Specimens are more drabish. The young are pale drab-gray above, gray and white below.

Geographic range.— Inhabits the Western Desert Tract (Basins of the lower Gila and Colorado rivers and head of the Gulf of California, west to the Coast Range of California).

Peromyscus texanus medius Mearns.

San Diego Plains-Mouse.

Peromyscus texanus medius, Mearns, Proc. U. S. Nat. Mus., ~~Vol.~~ XVIII, No. 1075, 1896 (advance sheets issued March 25, 1896), p. 446 (p. 4 of); Sitomys americanus thurberi, Allen, Bull. Am. Mus. Nat. Hist., New York, Vol. V, article XII, August 18, 1893, pp. 185, 186 (in part).

Type locality.—Nachoguero Valley, Lower California, near monument No. 248, Mexican boundary line.

Description.—In the original description of this form, it was stated that "between the ranges of the subspecies gambelii and thurberi, both dark-colored races of Peromyscus texanus, there is a narrow strip of southern and Lower California, bordering the Pacific Ocean for several hundred miles and

P. fx. mediana

extending east to the Coast Range of moun-
-tains, occupied by the present race, which
differs from either of those above mentioned
in being paler, with more drab and clay-colored
tints. It is smaller than P. t. gambelii; with
much larger ears, and a shorter tail. Its
paler, more ochraceous coloration at once
distinguishes it from P. t. thurberi, with
which it agrees in size. From P. t. deserticola
of the interior deserts, it differs in being
less robust, and in having somewhat larger
ears, and much darker colors." The upper
surface is deep wood-brown, shading to
russet on the cheeks, sides, and rump, and
thickly mixed with black above, giving a distinctly
dusky vertebral area; ears clove-brown,
densely coated with hair, with a faint hoary
edging; top of head wood-brown, paler than the back;

P. lex. nudus

under surface of body, and feet, pure white; tail, black above, white on sides and beneath.

Peromyscus texanus elementis, Mearns.

San Clemente Mouse.

Peromyscus texanus elementis, Mearns, Proc. U.S. Nat. Mus., Vol. XVIII, No. 1075, 1896, pp. 446, 447 (p. 4 of advance sheets, issued March 25, 1896).

Type locality.—San Clemente Island, off southern California.

This insular race was described as a subspecies of the mainland form, for the reason that examples from the nearer islands seemed to be somewhat intermediate in character between the typical form on San Clemente Island and that of the coast. The species occurs on each of the Coronados Islands, and on several islands of the Santa Barbara group.

Description.—This mouse is considerably larger and much blacker than *P. t. mediis*,

P. t. elsensis

and has a more pronounced reddish tinge of the neighboring mainland. The upper surface is drab anteriorly, strongly tinged with burnt umber posteriorly; top of head, drab-gray; ears black, with faint hoary edging; feet and under surface, white; tail sharply bicolored, blackish above. The above description is based on a series of specimens taken by the author, in August, 1894. Mr. A. W. Anthony, the well-~~not~~ known naturalist of San Diego, collected a series at the same time, which he has kindly placed at my disposal. The skull of this island race, while almost as large as that of P. t. desertícola from the lower Colorado River, is more slender and fragile.

1

Peromyscus rufinus (Merriam)

Arizona Wood Mouse.

Hesperomys leucopus rufinus, Merriam, North American Fauna, No. 3, September 11, 1890, pp. 64-66, pl. III, figs. 5, 6, 7, and 8 (teeth).

Hesperomys leucopus sonoriensis, Mearns, Bull. Am. Mus. Nat. Hist., New York, Vol. II, article XX, February 21, 1890, pp. 284-287 (San Francisco and Mogollon mountains, Arizona).

Peromyscus leucopus rufinus, Allen, Bull. Am. Mus. Nat. Hist., New York, Vol VII, article VI, June 29, 1895, pp. 232-234

?Sitomys sonoriensis, Allen, Bull. Am. Mus. Nat. Hist., New York, Vol V, article VI, April 28, 1893, pp. 74, 75.

From the place geographically nearest to the type locality of sonoriensis, viz.: to the species inhabiting the mountains of

Type locality. — Altitude of 9000 feet on San Francisco Mountain, Arizona. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — Transition and ~~Lower~~ Boreal zones of the mountains of the Elevated Central Tract.

When, in 1889, at the suggestion of Doctor J. A. Allen, I undertook the rearrangement of the American Museum specimens of the short-tailed Wood Mice and Plains-Mice of the West, which were then known collectively as Hesperomys leucopus sonoriensis, I restricted the application of Le Conte's name sonoriensis to that one of the five forms represented in the specimens examined which came from the place geographically nearest to the type locality of ~~the~~ sonoriensis, viz.: to the species inhabiting the mountains of

central Arizona, the type locality of Le Conte's Hesperomys sonoriensis being the Mexican town of Santa Cruz, just ~~below~~ south of the Arizona border, in Sonora. Immediately following this, Doctor C. Hart Merriam (l. c. p. 64) redescribed the Mouse to which I had restricted the name sonoriensis, and named it Hesperomys leucopus rufinus, although at the time quite as ignorant as myself ~~respecting~~ concerning the identity of Le Conte's Hesperomys sono=riensis; and, ~~indeed~~ indeed, it was not until the year 1893, when I visited Santa Cruz, Sonora (the type locality), and collected a series of topotypes of sonoriensis, and afterwards compared them with the type (skin and skull of a young individual) specimen in the U. S. National Museum, that anyone knew

P. leucopus

That Le Conte's animal was merely a geographic race of Woodhouse's Hesper= omys texanus, and belonged to a species distinct from the Arizona Wood Mouse, to which Doctor Merriam was fortunate enough to have pinned a name that sticks. On account of its resemblance to the Eastern Wood Mouse, Peromyscus leucopus (Raf= =inesque), Doctor Merriam named it as a subspecies of that Mouse, with= =out showing that it intergrades or has any connection of range with that species. In the absence of proof, it is unsafe to assume either of these to be a fact; and, at present, its pronounced cranial and external characters seem to warrant its separation as a distinct species, as it is not known to intergrade with any other.

Description. — Similar to Peromyscus

leucopus (Rafinesque), but slightly smaller, with much larger and broader ears, shorter tail, and lanuginous tufts at anterior base of ears. In winter, the color above is brownish fulvous, mixed with black in the median line; ears dusky, with hoary edging; tail sharply bicolor, with the stripe along its upper surface narrow and dusky; feet, and under parts, white. In summer the color of the upper surface is tawny cinnamon. Length, 160 mm.; tail vertebrae, 68 (to end of pencil, 73); ear above crown, 15 (above notch, 19); length of hind foot, 20.

Cranial and dental characters. — The skull of Peromyscus rufinus differs from that of P. leucopus in having the zygomatic arches elbowed out in front in such a manner that the skull is wider anteriorly than posteriorly, the reverse being true, as a rule, of P. leucopus. The

upper profile of the skull is less flat than that of P. leucopus, being highest interorbitally, thence sloping sharply down=ward in front and behind. There are somewhat prominent supraorbital and temporal ridges, which P. leucopus lacks. The incisive foramen is longer than in P. leucopus, the interpterygoid fossa longer and narrower, and the mandible has more produced angular and coronoid processes.

Peromyscus boylii penicillatus Mearns.

Barefooted Brush Mouse.

Peromyscus boylii penicillatus, Mearns,
Proc. U. S. Nat. Mus., XIX, No. 1103, 189-,
p. 139 (pp. 2, 3 of advance sheets, issued
May 26, 1896).

Crum Pacs

P. b. fraterculatus

Type locality. — Foothills of the Franklin Mountains, near El Paso, Texas. (Type, skin and skull, in the U. S. National Museum.)

Geographical range. — This subspecies is an inhabitant of the Eastern Desert Tract, its habitat being, doubtless, mainly in brushy or timbered hills, rising above the general level of the desert basins which make up this tract.

Description. — This is the palest subspecies of Peromyscus boylii, and differs from more western forms in having the soles of the hind feet naked to the heel. The upper surface is drab-gray, tinged on sides and rump with ochraceous buff. Ears nearly naked, with a scant hoary pubescence.

Tail dusky drab above, pure white below, penicillate, and rather hairy throughout. Feet and under parts pure white. The coloration is almost identical with that of Peromyscus eremicus arenarius. Length, ~~202 mm.~~ 202 mm.; tail vertebrae, 115; ear from crown, 14; ear from notch, 18; length of head (nose to occiput), 31; length of hind foot and claw, 22. Skull, 28 by 14.

Cranial and dental characters. — The skull is elongated, with the lengthened and depressed rostrum of P. boylii (typical) and P. boylii fenalis, but differs from them in having the nasal bones truncate posteriorly and ending considerably in front of the posterior extremities of the nasal branches of the ~~ff~~ premaxillaries, instead of terminating in a point well behind them. The dentition is very

different from that of the P. eremicus group, and agrees with the members of the P. leucopus group in having a subsidiary loop or fold of enamel between the two principal loops at the outer side of the first and second upper molars.

Peromyscus boylii (Baird).

Californian Brush Mouse.

Hesperomys boylii, Baird, Mamm. N. Am., 1857, p. 471, pls. VIII, fig. 3; LII, fig. 3 (original description and figures).

Peromyscus major, Rhoads, American Naturalist, ——, September 1, 1893, pp. 831, 832 (Squirrel Inn, San Bernardino County, California).

Description. This elegant species, long since accurately described by Professor Baird, is typical of the group of Brush Mice, which are somewhat intermediate between the Wood Mice and Desert Mice. This group inhabits the Sonoran — usually only the Upper Sonoran and Transition zones along the Mexican boundary line, from Texas to the Pacific; sometimes it penetrates the Lower Sonoran, or even crosses the Transition zone, reaching the lower edge of the Boreal.

A straggler was taken at the eastern base of the Coast Range Mountains, in California; one was taken at Mosquito Springs, Chihuahua (monument No. 46, Mexican boundary line); one was found quite low on the Franklin range, in western Texas; and three were obtained at Fort Clark, Kinney County, Texas. These all came from the Lower Sonoran Zone, where however they are mere stragglers from the higher zones, the Brush Mice being inhabitants of brushy or forested mountains, in the ~~(illegible)~~ altitudinal zone between the habitats of the Desert— and Plains-Mice and the habitat of the Arizona Wood Mouse (Peromyscus ~~rufinus~~ rufinus). On the Hachita, San Luis, San José, and Huachuca mountains, the subspecies pinalis ranged from base to summit, and P. rufinus was not found; but, in the

Chiricahua, Mogollon, White, Graham, San Francisco, and other high ranges of mountains in Arizona and New Mexico, P. rufinus occupies the Douglas spruce and aspen zone about the summits; and P. boylii pinalis is only found lower down, in the forest belts of pine, piñon, aligator juniper, cedar, and brushwood: As a rule, at least in the interior tract, the forms of P. boylii do not descend to the lowest valleys, even when these are wooded; and on the open country — the habitat of the Desert Mice (Peromyscus eremicus group) and Plains Mice (Peromyscus texanus group) — it occurs only as an accidental straggler.

boylii.

Subspecies boylii.

Type locality. — Middle fork of the American River, El Dorado County, California. (Type, skin — formerly mounted — and skull, in the U. S. National Museum.)

Geographical range. — Upper Sonoran and Transition zones of the interior of California, reaching the coast in southern and Lower California.

P. boylii

Description.—Upper surface broccoli brown, tinged with cinnamon along cheeks, sides and rump, and darkened on the back by black-tipped hairs; under surface and feet pure white; orbital area dusky; ears coated with short down, of the same color as the surrounding parts; tail bicolor, clove brown above, white below. In winter specimens, the vertebral area is decidedly blackish, in which respect the typical form differs from P. boylii grisalis, in which ~~the~~ dorsal part is paler and browner, and P. boylii penicillatus in which the dark vertebral area has practically disappeared, the whole upper surface being pale grayish drab. The cinnamon-colored area of the sides is more restricted than in grisalis and the coloration in general, darker, while P. b. penicillatus and P. b. attwateri, are still paler forms.

The young, which, on the higher portions of the Coast Range, are born in May, are

one-half to three-fourths grown by the middle of June. They are at first mouse gray above, darker about the orbit, and white below, where the gray basal portion of the coat can be discerned through the narrowly white-tipped hair. As they grow older they acquire a paler, more drab coloration. The adult coat is assumed in the usual way, the nape being the last place to receive the long coat, which, as usual, is darker and grayer at first, lacking the warm cinnamon color along the "water-line." The young, like adults, can be identified by the pencilled termination of the tail. The pelage of this form is dense and silky like that of the members of the P. ~~texanus~~ texanus group.

A fine adult male, from the eastern base of the Coast Range Mountains,

6 P. boylii

is paler, and has much more of the cinnamon color than those from the summit and western slopes of these mountains. In this respect it agrees more closely with the type of Baird's boylii and topotypes of Rhoads's major, than the rest of our series these representing the interior form of the region of California, which is not so dark as that of the coast, in middle and northern California, which latter may be recognized as Peromyscus boylii robustus (Allen*). Our specimens

* Sitomys robustus, Allen, Bull. Am. Mus. Nat. Hist., V, Art. XIX, December 16, 1893, pp. 335, 336. (Original description; type, skin and skull, from Lakeport, Lake County, California, in the New York American Museum of Natural History.)

from west of the Coast Range are somewhat intermediate between true

P. boylii

boylii and *robustus*, but they seem to me to be nearest to the former.

Measurements.—Average of eight adult males: length, 201 mm.; tail vertebrae, 104; ear from crown, 14.9; length of hind foot, 22.1. Average of seven adult females: length, 205; tail vertebrae, 110; ear from crown, 15.4; length of hind foot, 22.6. As usual, the females are a trifle larger than the males.

Cranial and dental characters.—The skull of the type (No. $\frac{1270}{358}$, U. S. National Museum—skull and caudal vertebrae in fair condition) ~~of Peromyscus boylii (Baird) measures 27.5 by 13.7~~ of Hesperomys boylii, Baird, measures 27.5 by 13.7 mm. It is indistinguishable from a series of skulls of this species from the coast region of southern California, when individuals of corresponding age (i.e. youngish adults) are compared. The characters of the skull and teeth are shown in the accompanying figures (Figs. (1270) —, —) of the type specimen.

Geographical range. — ~~The~~ Sonoran Zone of the Pacific Coast Tract of southern and Lower California.

Peromyscus californicus insignis Rhoads
Southern ~~Desert~~ Parasitic Mouse.

Peromyscus insignis, Rhoads, Proc. Acad. Nat. Sci. Phila., 1895, pp. 33, 34 (original description).

(new page)

Type locality. — Dulzura, San Diego County, California (Type, skin and skull, in the [illegible]

~~Peromyscus~~ Description. —

Peromyscus californicus belongs strictly to the group of "Desert Mice", typified by Peromyscus eremicus (Baird), which are characterized by bare soles, long, tapering, scant-haired tails, large membranous ears, ~~and~~ flattened skulls, with shortened rostrum and postorbital ~~trigonate~~ advanced, ~~advanced~~, nasal bones, and teeth ~~with~~ having ~~in which~~ the subsidiary marginal cusps reduced to the merest trace — only a step removed from the Onychomys form, in which the notches are smooth, without a trace of these

(Fig. —, p. —)

minor cusps. The southern subspecies (insignis) differs from the typical form (californicus) in being larger, paler and grayer, without the brown vent and fulvous suffusion of throat and breast characteristic of northern specimens.

This is the largest species of Peromyscus found in the United States. Its appearance suggests a ~~young~~ small Neotoma; ~~but~~ which resemblance is strengthened by its large, nearly naked, highly sensitive membranous ears, which in life are in constant motion, as its nose. Its proportions are similar to those of the ~~largest~~ members of the Desert Mice group. The tail is hairier than usual, the hairs increasing in length from base to tip, those of its under surface being much shorter than above; its color is clove brown above, sometimes white and

sometimes dusky below, usually without a line of demarkation between. Body above, brownish gray, coarsely ~~mingled w~~ mixed with black, grayest on the head; gradually changing to tawny cinnamon on sides, rump and outer surface of limbs. As in Peromyscus merriami the dark coloring of the outer surface of fore limbs extends down to the wrists. The feet are white, except that the dark coloring often extends down on the basal third of the dorsum of pes, as in Neotoma microps. The under surface is sometimes wholly white, but more often with a pectoral spot of cinnamon or fawn-color on the chest, this, when present, varying from a trace to a large patch. Sometimes there is a colored patch on the throat. The orbital region is dusky. Topotypes (from Dulzura, California) are more mixed with black above in winter than in summer, as at La Jolla.

A young specimen, taken on the edge of the

by Mr. F. Stephens.

Pacific, February 10, 1892, was one-third grown at the date of capture. This, the youngest specimen in the series of forty before me, is smoke gray above, and has a faint drab staining on the sides, and the barest indication of the pectoral patch; below white, exhibiting much of the gray basal portion of the hair between the narrowly white tips.

Cranial characters. — There are but two skulls of northern O. californicus in the National Museum. One of these (No. $\frac{2039}{1157}$, U.S.N.M.) is labelled "Santa Clara", in Professor Baird's hand-writing; and the other (No. $\frac{23297}{14481}$, U.S.N.M.) was collected at Baird, in northern California, by Mr. C. H. Townsend. These are rather young, and slightly smaller than specimens of O. c. insignis of the same age. The nasals are a little shorter in the northern specimens;

but I can discern no other difference of importance ~~3/4. that of the frontal bones in the shape~~ The alleged difference in the form of the frontal bones referred to by Mr. Rhoads (l. c. page 34) is due to age of the specimens examined.

Peromyscus eremicus fraterculus ± Miller

San Diego Desert-Mouse.

Sitomys fraterculus, Miller, American Naturalist, ~~Vol.~~ XXVI, March, 1892, pp. 261–264 (original description; author's separates not paged).

Sitomys herroni, Rhoads, American Naturalist, (Vol. ?), September 1, 1893, pp. 832, 833. (Type locality, San Bernardino Valley, southern California.)

Sitomys herroni nigellus, Rhoads, Proc. Acad. Nat. Sci. Phila., (Vol. ?), 1894, pp. 257, 258 (Type locality, West Cajon Pass, San Bernardino Mountains, California.)

Type locality.—Dulzura, San Diego County, California. (Type, skin and skull, deposited in the U. S. National Museum.) Sonoran Zone of the Geographical range.—Pacific Coast Tract of southern and Lower California.

Description.—Larger and darker than Peromyscus eremicus (typical); under parts with a muddy staining, whereas the more eastern forms of P. eremicus have the under surface pure white unless there is a pectoral spot of cinnamon. Its general resemblace to P. californicus, except in size, suggested the name fraterculus. As stated by Mr. Rhoads, in the American Naturalist for September, 1893, "Mr. Miller, who described fraterculus as a full species, now considers it a 'dark coast form

of eremicus.")

The coloration, as a whole, is darker than in the other subspecies of P. eremicus; the upper surface being liberally mixed with black-tipped hairs; under surface grayish white, stained with clay color, often with a spot of cinnamon on the chest; sides tawny cinnamon instead of ochraceous buff; tail nearly naked except near the end, dusky below, not at all bicolored. In eremicus (typical) the under side of the tail is decidedly paler than the upper, but without any line of demar=cation; while the subspecies ~~arenicola~~ arenarius has the tail practically bicolored, ~~the~~ its under surface being pure white.

In the Coast Range Mountains, where

the winters are cold, the young of the first litter are born about March, and mature about August. Near the coast, where there is uniformity of temperature, they breed indiscriminately throughout the year. The first pelage is slate-gray above, and grayish white below, where the whitish points on the hairs are very narrow. When two-thirds grown, the adult pelage is assumed coincidently with the occurrence of the moult, which begins on the under surface, extends thence to the sides, whence a median extension is produced upward until it meets the opposite side and completes the girdle, appearing above as a narrow band across the middle of the back, but covering all of the under surface from the neck to the inguinal region. The ~~coloring~~ then coating extends to the limbs and head, ~~leaving~~ the dorsal band broadening until only a small spot on the nape and another on the upper part of the rump remain — the last to be covered by the new hair. In immature specimens the ~~coloration~~ coloring is duller than in adults.

This subspecies grows paler in the notches and on the eastern slope of the Coast Range, where intergradation with P. eremicus is indicated, begins. At Mountain Spring, half-way up the eastern slope of the Coast Range Mountains, we obtained specimens almost as pale as P. eremicus, with nearly white underparts, though most specimens from there were nearer to P. e. fraterculus. Mr.

S. N. Rhoads has described the intergrades between *eremicus* and *fraterculus*, from the San Bernardino Valley, California, under the name *Ditomyx herronii*; and later the same author described *Peromyscus eremicus* and *Peromyscus eremicus fraterculus* was afterwards re-described by him as *Ditomyx herroni nigellus*, from West Cajon Pass, San Bernardino Mountains, southern California. I am indebted to Mr. Rhoads for an opportunity of examining these types, and of comparing them with the series of Desert Mice in the U. S. National Museum.

Geographic range. — Pacific Coast Tract, from the eastern base of the Coast Range Mountains to the ocean; north and south range not accurately known.

Peromyscus martirensis (Allen).

San Pedro Martir Big-eared Mouse.

~~Peri~~

Sitomys martirensis, Allen, Bull. Am. Mus. Nat. Hist., V, Art. XII, August 18, 1893, pp. 187, 188 (original description).

new range

Type locality.—San Pedro Martir Mountains, Lower California, altitude 7000 feet. (Type, skin and skull in the New York American Museum of Natural History.

Geographical range.—Upper Sonoran and Transition zones of the mountains of southern and Lower California.

Description.—The following is taken from Doctor J. A. Allen's original description of this species: "Similar [illegible]

Two specimens of Peromyscus
martirensis in the boundary collection
(No. 61033

Peromyscus martirensis

No. 1263 (= 8081/6438 Am. Mus. Coll.) of Holzner's Collection, from the summit of the Coast Range Mountains, is very close to Dr. Allen's P. martirensis, from the San Pedro Martir Mountains, Lower California, altitude 7000 feet. As might be supposed, it departs somewhat from the typical form, and approaches the darker form to the northward, which Dr. Allen has named Peromyscus gilberti. It is not, however, exactly intermediate in coloration, but is paler than either of the others, and so corresponds with the subspecies medius of P. texanus. It is not improbable that P. martirensis may eventually prove to be but a long-tailed geographic phase of P. truei.

which though fully adult are not so mature as that of the type of *Peromyscus truei*.

The ~~two specimens~~ ~~skins~~ of *P. martirensis* ~~in the boundary collection~~ (No. 61033, U. S. National Museum collection, and No. $\frac{8081}{6438}$, American Museum of Natural History collection), were taken ~~at the~~ on May 17, 1894, in San Diego County, California, close to the Mexican border. No. 61033, an adult female, furnished the following measurements, taken from the fresh specimen by the author: Length of head and body, 93 mm.*; ear from crown, 19.2; length of hind foot, 23; longest whisker, 50. Skull, 29 by 14. No. $\frac{8081}{6438}$, an adult ~~female~~ male measured: length, 203 mm.; tail vertebrae, 115; ear from crown, 19; length of hind foot, 23.

* End of tail gone.

(Peromyscus gilberti – Sheet IV.)

Description (based on No. 61033, U. S. N. M. International Boundary Commission, an adult female, ~~trapped~~ in the wagon-pass at the summit of the Coast Range Mountains, near the Mexican border, ~~---~~ May 17, 1894, by Dr. W. Marrs). — About the size of Peromyscus truei. ~~Ears~~ The ears are enormous, and nearly naked. Tail well haired, and sharply bicolor. Soles of feet hairy at the heel. Whiskers very long, extending back of the shoulders. ~~Feet and under parts pure w~~ Pelage long, dense, and silky. Feet and under parts pure white ~~Vent dusky~~, with a trace of an ochraceous pectoral patch, as in the type of P. truei. Vent rusty. Ears dark purplish brown, coated only with sparse, downy hairs. Above yellowish drab, grayer on the muzzle and ~~nose~~ nose, thickly lined with dusky

~~(Peromyscus gilberti – Sheet IV.)~~

annuli and tips to the hairs, and bordered by a line of ochraceous buff extending along the sides from the cheeks to the rump. ~~[Insert measurements and comparisons with true from Sheets 1–3.]~~

P. [illegible] — 8

Remarks.

This huge-eared Mouse, though closely related to Peromyscus truei (Shufeldt), is apparently distinct. It is about the same size. The type of P. truei, a very old male specimen, ~~has~~ ~~it~~ is distorted, having the skin bunched up in such a manner that it is impossible to obtain by measurement an approximation to its original size. It presents the following dimensions: tail, 76 mm. (to end of pencil, 86); ear from notch (about), 21; hind foot, 21; longest whisker, 48. It is much the same color as Peromyscus eremicus (typical). The pelage is very long, dense, and silky, the fur measuring 16 mm. in length on the back. The ears are flesh-colored and sparsely coated with short, grayish down. The dorsum is a mixture of drab and ochraceous buff,

finely mixed with black. The color is given by the tips of the hairs, between which the slate-colored basal portion of the hair appears to some extent. The sides are ochraceous buff. Feet, and under parts, white. The ~~tail, which is~~ densely-haired, ~~is~~ tail is sharply bicolored; clove brown above, white on sides and below. Whiskers mostly colorless, but mixed with black. Soles of feet very hairy. The skull measures ~~22 3 by~~ 29 mm. in total length; basilar length (Hensel), 22.3; zygomatic breadth, 15.2. It belonged to a very aged individual, ~~it~~ and is a little longer, and, relatively, much ~~wider~~ broader than ~~the~~ two skulls of Peromyscus martirensis that we collected on the boundary-line, in a pass at the summit of the Coast Range Mountains,

which, though fully adult, are not so mature as that of the type of P. trurei. The skull of P. marturensis measures: total length (occipito-nasal), 28.2 mm.; Zygo-=matic breadth, 13.8; basilar length (Hensel), 21.2.

(Paragraph)

Comparing these specimens with the type of P. trurei, the ears appear to be about the same size. The colors of P. marturensis are very much darker, owing to the blackish annulation of the drab fur of the upper surface. Only a narrow line, between the grayish drab upper parts and the white under parts, is ochraceous buff. There is a faint trace of ochraceous on the breast of P. trurei, and also on these specimens of P. marturensis. The ears are more darkly colored, but as scantily clothed as those of P. trurei. The fur, though fine and soft, is coarser than that of P. trurei, and considerably shorter; with the tail less hairy. The difference in coloration between P. trurei and P. marturensis is closely paralleled by P. crenucis and P. fraterculus of corresponding regions.

As would be supposed, the specimens from the Mexican border, several hundred miles north of the type locality of Peromyscus martirensis, depart somewhat from the typical form, and approach the ~~darker~~ form to the northward which Doctor Allen[*] has named

[*] Bull. Am. Mus. Nat. Hist., V, ~~Go~~ Art. XII, August 18, 1893, pp. 188~~,~~ —190.

Peromyscus gilberti. It is not, however, exactly intermediate, but, in coloration, is paler than either P. martirensis or P. gilberti, and so corresponds with the subspecies medius of P. texanus.

Peromyscus boylii attwateri (Allen).

Attwater Brush Mouse.

Peromyscus attwateri, Allen, Bull. Am. Mus. Nat. Hist., VII, Art. X, November 8, 1895, pp. 330, 331 (original description); ibid, VIII, Art. V, April 22, 1896, p. 65 (Lacey's ranch, Kerr County, Texas).

new page

Type locality. — Turtle Creek, Kerr County, Texas. (Type, skin and skull, in the New York American Museum of Natural History.)

Geographical range. — Elevated portions of Middle Texas, in the ~~Upper~~ Donoran zone. Hills of ~~Bexar~~ Kerr and Kinney counties.

This dark-colored form of Peromyscus boylii was recently described by Doctor J. A. Allen from a series of specimens from round about San Antonio, Texas, collected by the indefadigable Attwater. In describing it, I cannot do better than transcribe Doctor Allen's original description: —

Begin a ~~line~~ paragraph below with Allen's description (pages 330-331), leaving out "Type" etc. at place marked on p. 331